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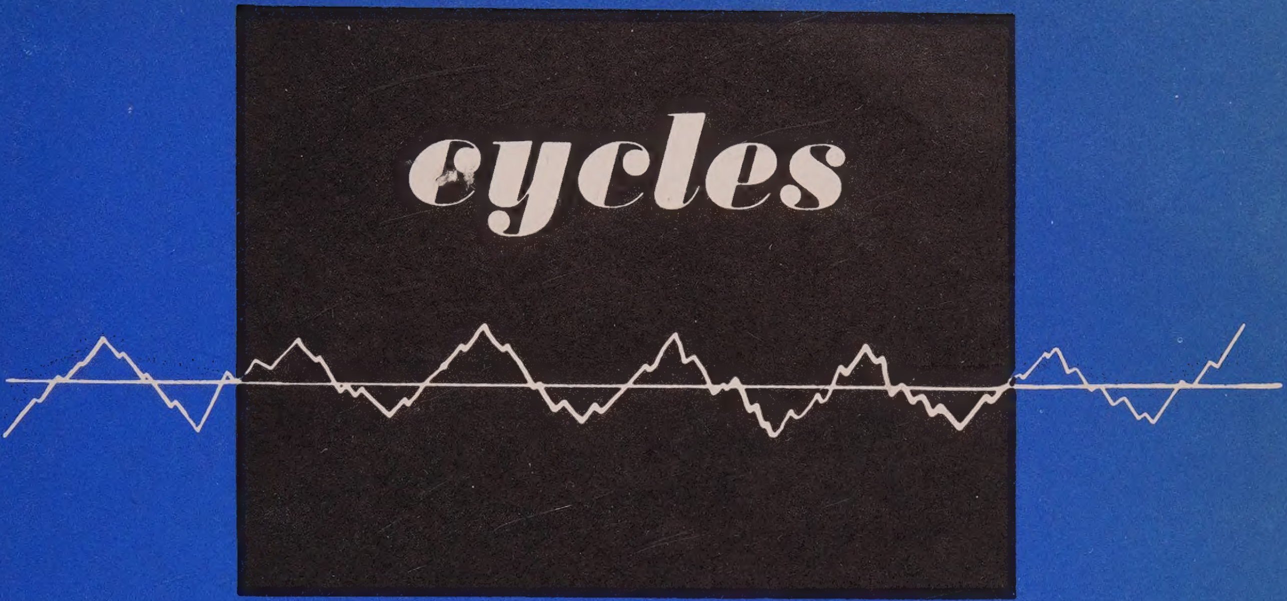

December 1956

FOUNDATION FOR THE STUDY OF CYCLES
New York, New York

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Cycles is published by the Foundation for the Study of Cycles monthly at the Foundation's office at East Brady, Pennsylvania. Subscription rate $10.00 a year. Entered as second class matter at the post office at East Brady, Pennsylvania, with additional entry at Ann Arbor, Michigan. Publication office, 680 West End Avenue, New York 25, New York.
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cycles

The official Bulletin of
the Foundation for the
Study of Cycles

VOLUME VII NUMBER 12 DECEMBER 1956

THE DIRECTOR'S LETTER

Dear Member:

As I write, guns are booming in the middle east. This is in accordance with expectations. International conflict is *due* to be on the rise at this time, as I have told you on numerous occasions.

You may remember a chart I first printed for you in *Cycles* for June 1952. It showed the underlying growth trend of international battles together with diagrams of 142-year, 57-year, 22 1/5-year, and 11 1/5-year cycles. It also combined trend and cycles into a synthesis, and projected this synthesis to 1971. This chart is reprinted below.

As the scale is small let me give you the actual values of the projection from the low of 1952 to the high of 1963. (In this projection a minor engagement counts for 1, a medium sized engagement counts for 2, and a major engagement counts for 3.)

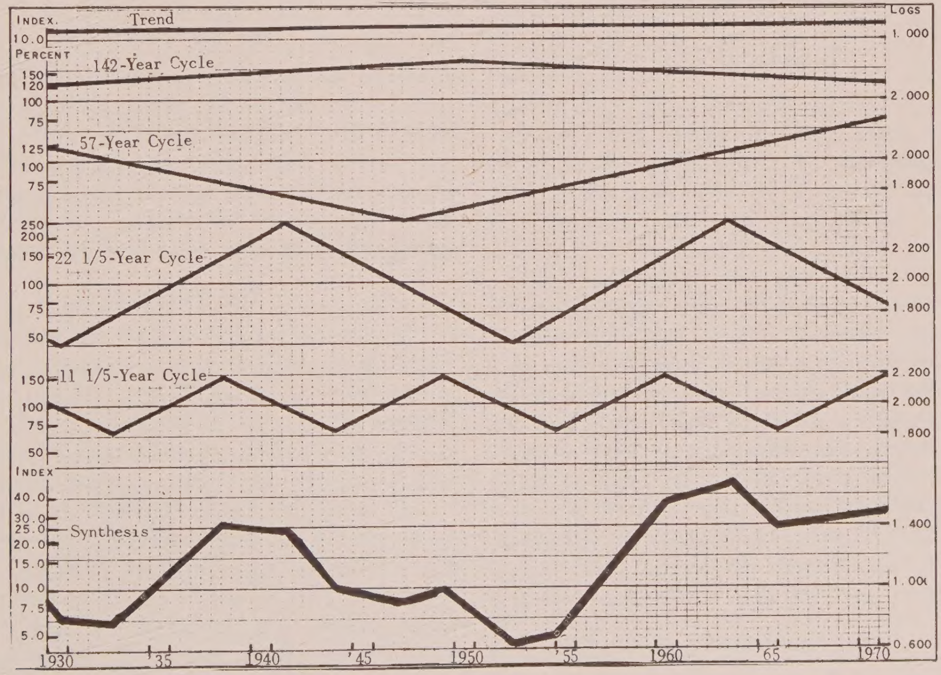


Fig. 1. This chart shows the trend and the 142-year, 57-year, 22 1/5-year, 11 1/5-year cycles as found in Professor Raymond H. Wheeler's index of international battles. The bottom curve represents the synthesis of these waves together with trend. The synthesis has been projected to give a general idea of future probabilities, if these cycles continue.

Projected Values of International Battle Index

Year	Index Value, Projected
1952	4
1953	4½
1954	5
1955	7
1956	10
1957	14
1958	19
1959	26
1960	36
1961	40
1962	44
1963	48

This is normal expectation. Of course things are not likely to work out *exactly* this way, but the chart gives you a general idea of what to look for.

Why?

The immediate reaction of everyone is, *why?* My belief is that there are environmental forces corresponding to each of these four wave lengths and that these forces act upon human beings in the mass to make them more excitable and/or more combatitive.

Sunspots

What could these forces be? A perennial answer is, of course, *sunspots*.

The proponents of the sunspot idea have a good deal to back up their theory. For one thing, an 11+ year cycle dominating sunspots has been traced back to 300 B.C.; an 11+ year cycle dominating mass excitement has independently been traced back even farther. Second, charts of both series of figures tend to have nine peaks per century. The sunspot fellows can show that deaths, disease, and suicide increase at times of sunspots. And third, the international battle index tends to fluctuate in dramatic accord with the curve of the double sunspot cycle (Refer to the chart on page 328 of this issue, drawn to illustrate a letter from Captain W. A. Moore, U.S.N.)

An Open Mind

I have an open mind in regard to the sunspot theory, but so far I do not find myself convinced. I do feel, however, that it is a theory worthy of very serious investigation. The arguments pro and con will be considered in more detail in future reports. In the meantime, sunspot numbers and international battles are climbing!

The Musical Scale

An ingenious fellow from Minneapolis, a Mr. D. C. Castle, has noticed that all but one of the stock market cycles I discovered in 1944 have lengths which fit almost exactly into the musical scale! (See his letter and chart on pages 336 and 337 of this issue.)

The one length that doesn't fit is 21 years. To fit into the musical scale this length should be 22 years instead of 21 years. And it is!

The musical scale calls for some other cycles that I did not find back in 1944. One of these is 27 years long. I have since found *it*. In fact I am including it in the revised projection printed for you on page 333 of this issue.

Revision of My Stock Market Forecast of 1944

As fast as possible I am auditing and revising the stock market projection I made in 1944. In this issue I revise trend and include the 27-year cycle of which I have just spoken. See page 333.

The 5½-Year Cycle

This issue also contains a story about the 5½-year cycle in airplane passenger miles. The 5½-year cycle is very important. It was discovered in 1874 and has been coming true ever since. It is present in many things. I shall devote a whole chapter of the Postscript to it early next year.

The Postscript

Projected installments of the Postscript include not only the chapters of the 5½-year cycle just mentioned, but also chapters on the 5.95-year cycle, the 12- or 12.5-year cycle (I still don't know which length is right!), and many others.

I hope you realize that the Postscript is a whole new book on cycles, being given to you just as fast as I can put it together. The Index has crowded it out of this issue, but it will be back shortly!

With season's greetings, I am,
Most cordially yours—

Edward R. Dewey

P.S. Give *Cycles* for Christmas. ($10 for one year; $16 for two years or two gifts.

STOCK MARKET TREND

IT is very interesting that stock prices at the present time are exactly the same amount above trend as they were in 1929.

As everyone knows, in spite of important set backs, the trend of stock prices has been upward from the earliest known figures to the present time. (Trend is the tendency of a series of figures to change direction gradually.)

From the standpoint of cycle study trend is important. Trend is the imaginary line about which all the cycles oscillate.

Computing Trend

There are many ways of computing trend. Which method to use in any given instance depends upon how the figures behave and the use one wishes to make of the trend line. In some instances trend should be represented by a straight line. In other instances it can be portrayed best by a curved line, either a "mathematical" curve or by a moving average. What trend to use in a particular case is a matter of judgment.

In my judgment the best trend line to use to represent the upward growth of the Standard & Poor's Combined Index of Stock Prices (now 480 stocks), 1871--1956, is a straight line fitted to the logs of the data by a method known as "least squares." Such a trend is shown on the chart on the two pages next following.

The chart also shows by means of a separate diagram the amounts by which the index has been above or below the trend.

The Actual Values

The values of the index, the values of the trend, and the percentages by which the index values are above or below trend will be published in a later report.

At this point a word of explanation is necessary. For *cycle study* we almost always use a moving average trend. We do this because it makes the study of any one cycle easier and more fruitful. However a moving average is not usually the best trend to use to get an overall idea of growth.

By construction, any trend line lies more or less in the middle. Values above the trend line are compensated for by values below it. Highs are followed by lows, and vice versa. It should be clear to anyone that we are now at or near the crest of a tremendous peak. It is not amiss—even though it is always unpopular—to suggest that what goes up *must*, sooner or later, come down!

Projection

The projection into the future of any trend line is of dubious validity. However, *something* has to be projected as the basis of any forecast, and the general tendency over past years is all we have to go on. Trend *can* therefore be projected but it should always be done with crossed fingers, and taken with a teaspoonful of salt. My straight line trend is projected to the year 2000 with this understanding.

E.R.D.

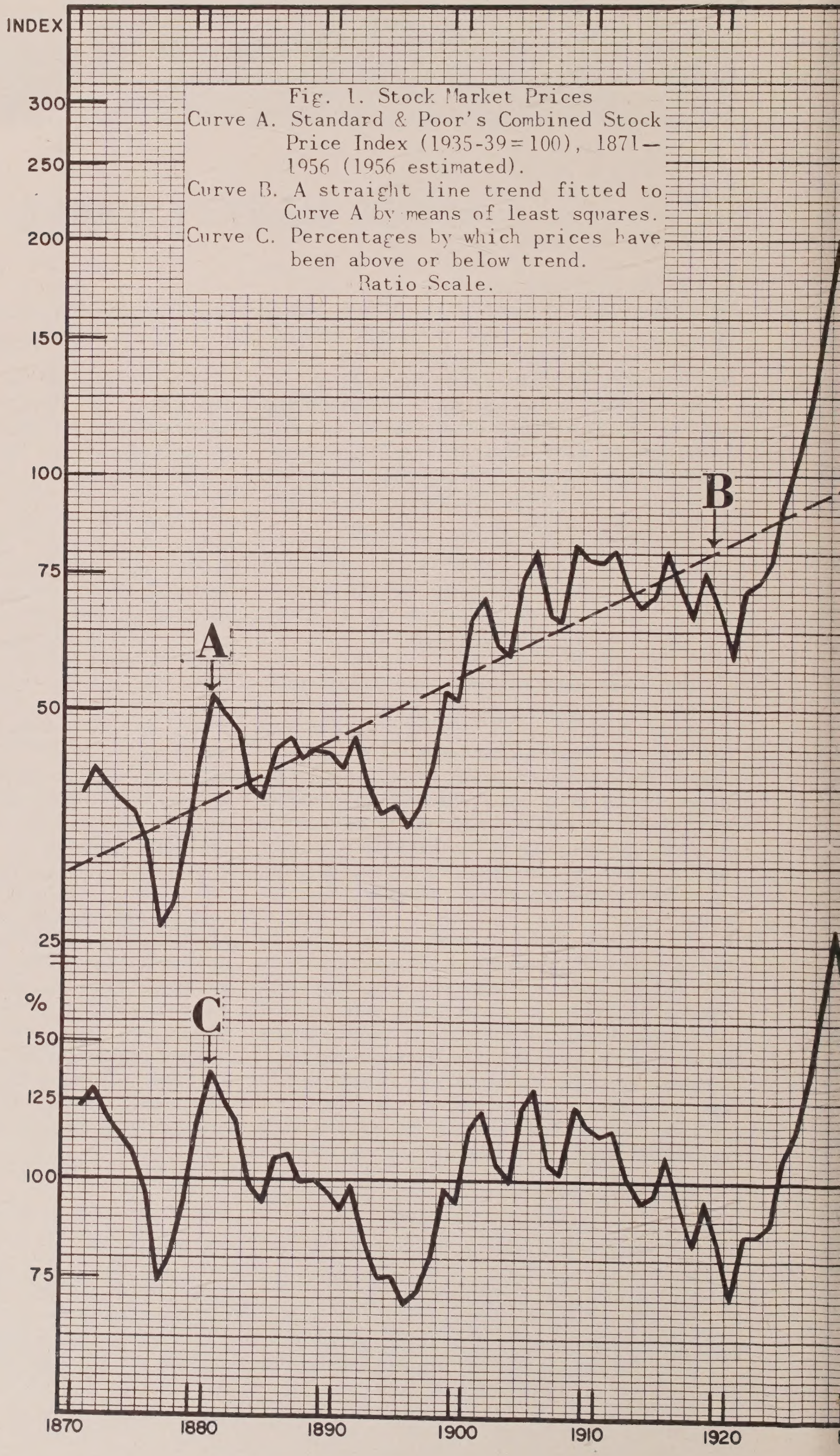
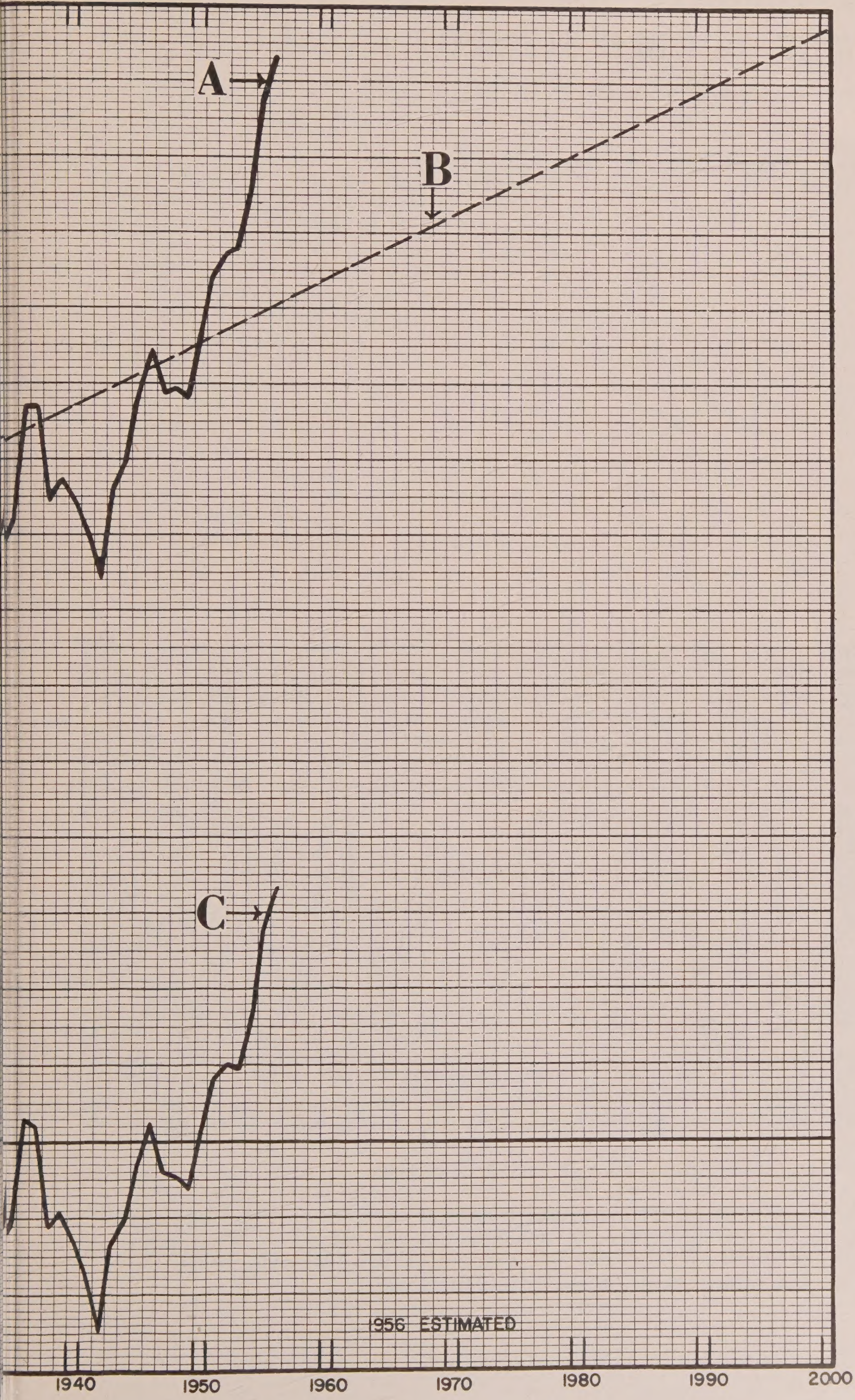


Fig. 1. Stock Market Prices
Curve A. Standard & Poor's Combined Stock Price Index (1935-39=100), 1871—1956 (1956 estimated).
Curve B. A straight line trend fitted to Curve A by means of least squares.
Curve C. Percentages by which prices have been above or below trend.
Ratio Scale.


A
B
C
1956 ESTIMATED
1940
1950
1960
1970
1980
1990
2000

INTERNATIONAL BATTLES AND THE DOUBLE SUNSPOT CYCLE

by W. A. Moore, Jr.
Captain, U.S. Navy

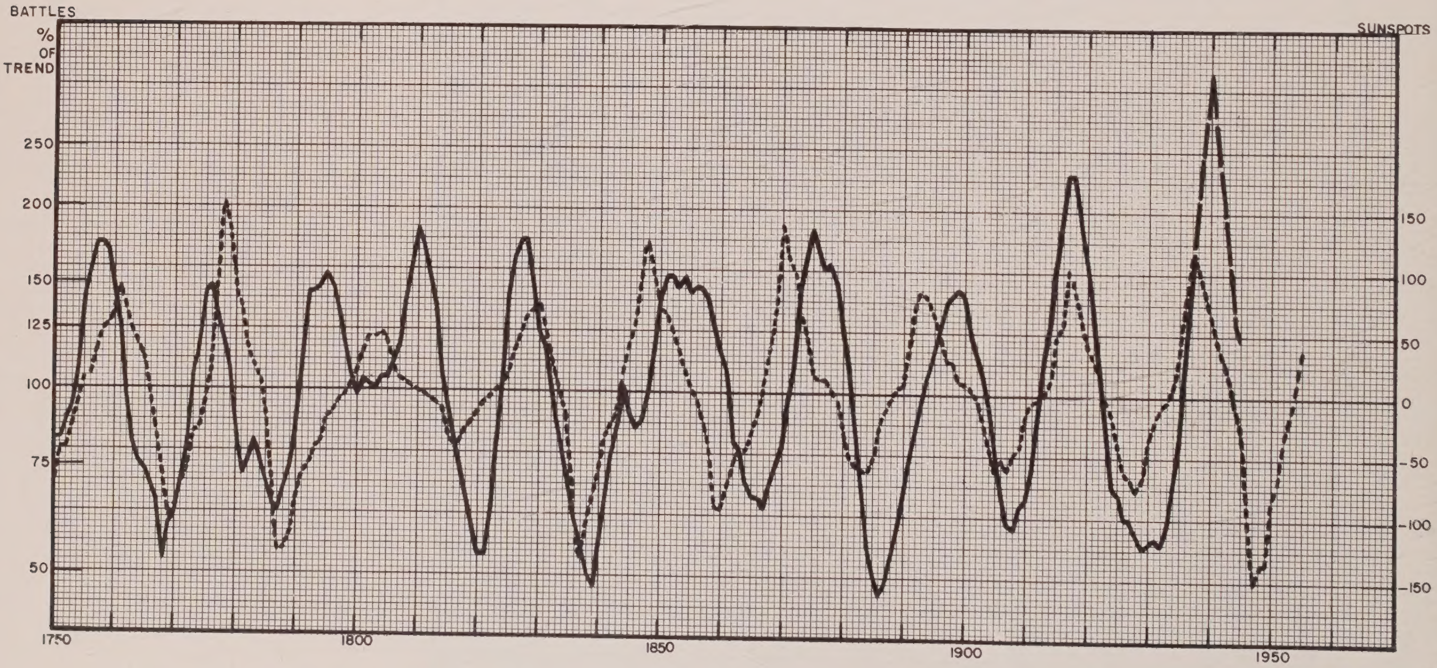
I RECENTLY decided to review all..... .....your publications.

The most important item is in regard to cycles in international war. I ran across Prof. Wheeler's study of cycles of international war and his discussion of effect of climate as published in your Jan. and Feb. '51 issues of Cycles. Also I reviewed Anderson's findings in regard to sunspot cycles with the curve drawn with alternate cycles reversed. Noting the similarity between the 22 1/5-year cycles in sunspot curves and the 22 1/7-year cycle you found in Wheeler's data, it occurred to me that they were probably the same cycle. However, in line with my belief that the true-ideal cycle does not exist in nature, as tended to be confirmed by my studies on sunspots and the stock market, I tried superposing the double sunspot cycle back to 1750 on the following charts:

1. Fig. 1, page 2 of Jan. '51 Cycles.
2. Fig. 1, page 45 of Feb. '51 Cycles.

The correlation between the curves of international war and the double sunspot cycle is found to be almost 100%, *and much better than your ideal 22 1/7-year cycle.* Further it is clear that the double sunspot cycle is the primary motivating cycle, although evidence of a half cycle corresponding to the sunspot curve without alternate cycles reversed is evident. Although the conclusions to be drawn from your cycle and my cycle are not very different, except for timing, I believe use of the double sunspot cycle would be best...

...It would be very interesting to see these plots carried back further into history...



Sunspots and International War, 1750 Forward

Broken line, relative sunspot numbers with alternate cycles reversed, 1750—1955. By September 1956 sunspots had reached a value of 182. Scale on the right.

Solid line, smoothed index of international battles, 1750—1945 (the smoothing process loses the last ten values. Scale on the left. Ratio scale.

DR. ABBOT'S SIXTY-YEAR WEATHER FORECASTS

DR. C. G. Abbot is continuing his efforts to forecast weather by means of a knowledge of cycles. Some of his latest results are contained in a report called, "Sixty-Year Weather Forecasts."

Doctor Abbot has found thirty different cycles in weather. All of these have lengths which are within 1% of simple unit fractions of 22 3/4 years. (Unit fractions are 1/2, 1/3, 1/4, 1/5, etc.) I told you about these 30 cycles in our report for April 1953.

Doctor Abbot now makes two additional discoveries. He finds that his cycles behave differently according to (a) the number of sunspots and (b) according to the time of the year. He has refined his earlier studies to take these facts into account.

For each cycle length Doctor Abbot now makes separate calculations of (i) timing (ii) strength and (iii) shape according to whether or not there are (1) more than 20 sunspots or (2) fewer than 20 sunspots. That is, using only those months which have had more than 20 sunspots, he makes one determination; using only those months which have had less than 20 sunspots he makes another. For purposes of prediction, in order to know which of his two alternate values to use, he must of course estimate whether there will be more or fewer than 20 sunspots in the months to come. However this is not too hard to do for short distances into the future.

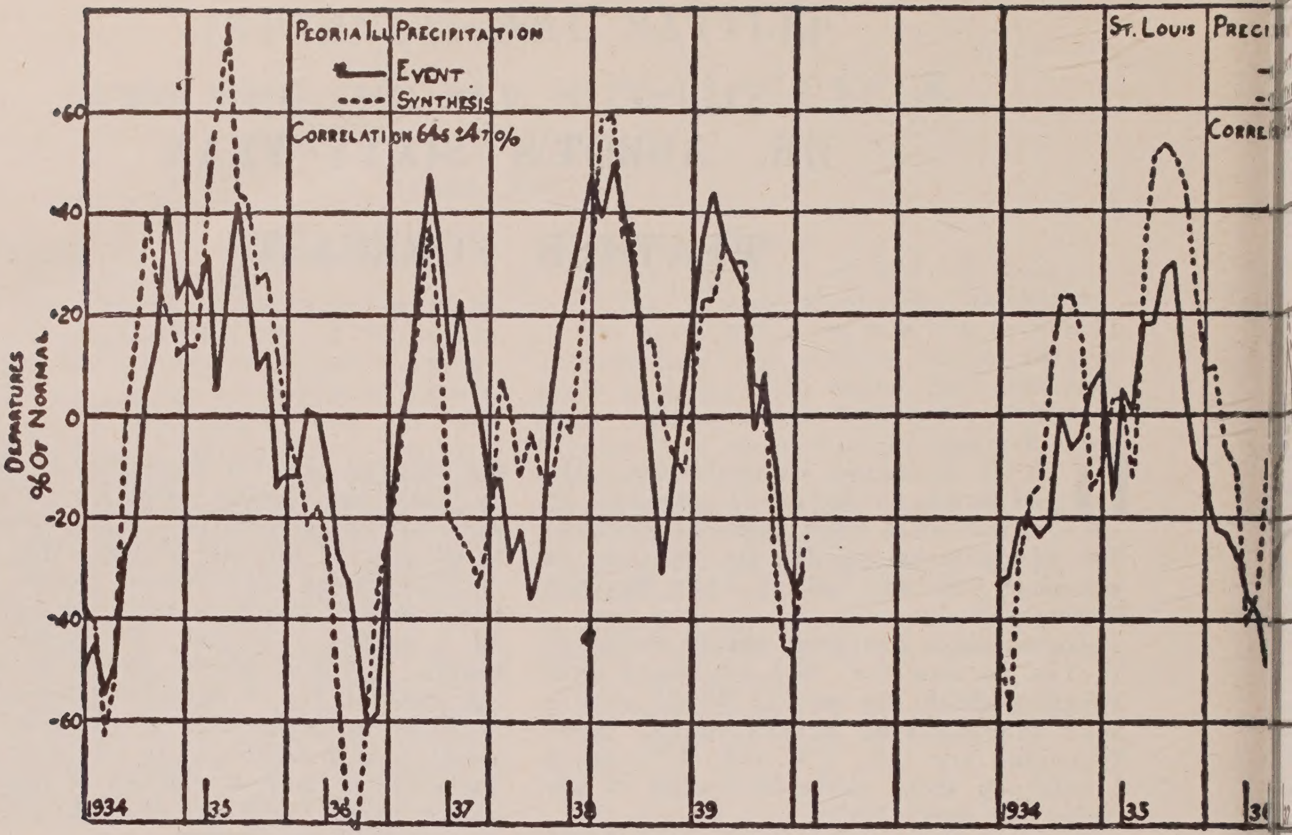
In addition, for each cycle length used and for each of the two sunspot categories, Doctor Abbot makes separate calculations for each of three sections of the year. These sections are (1) January—April, (2) May—August, and (3) September—December. He finds that turning points of the cycle, and other characteristics, differ according to the part of the year in which they fall.

Using these refinements, Doctor Abbot has computed new forecasts for rainfall for a number of places. The results for Peoria, Illinois, and St. Louis, Missouri, are shown in Fig. 6 reproduced herewith.

These forecasts were based on the projection and combination of 22 cycles. These cycles were determined as indicated above using figures from January 1854 through December of 1939.

In respect to St. Louis, Missouri, Dr. Abbot feels that the combination of cycles, determined as above, gives fairly satisfactory description for 70 out of the 100 years since 1854. Some of the satisfactory correspondences are shown in Figs. 2, 3, 4, and 5. For the 30 unsatisfactory years, Doctor Abbot feels that a reasonable explanation lies in great volcanic eruptions which create high columns of vapor and dust. He gives a list of such eruptions and of the unsatisfactory years and adds, "It will be seen that almost all of these unsatisfactory intervals fall either when tremendous volcanic eruptions occurred or when there was tremendous use of explosives in war or explosions of atomic bombs."

Doctor Abbot feels that similar studies of temperature and rainfall should be made for many different weather stations. He continues and concludes, "From such studies maps of expected weather conditions for many years in advance could be drawn. Such maps, if found to give general conditions with reasonable approximation, would evidently be of great value for many



Figs. 2, 3, and 4. Combinations of cycles (broken lines) compared with the event (solid line), 1934—1939. Rainfall (Peoria, Illinois and St. Louis, Missouri) and temperature (St. Louis), All from 5-month smoothed running means.

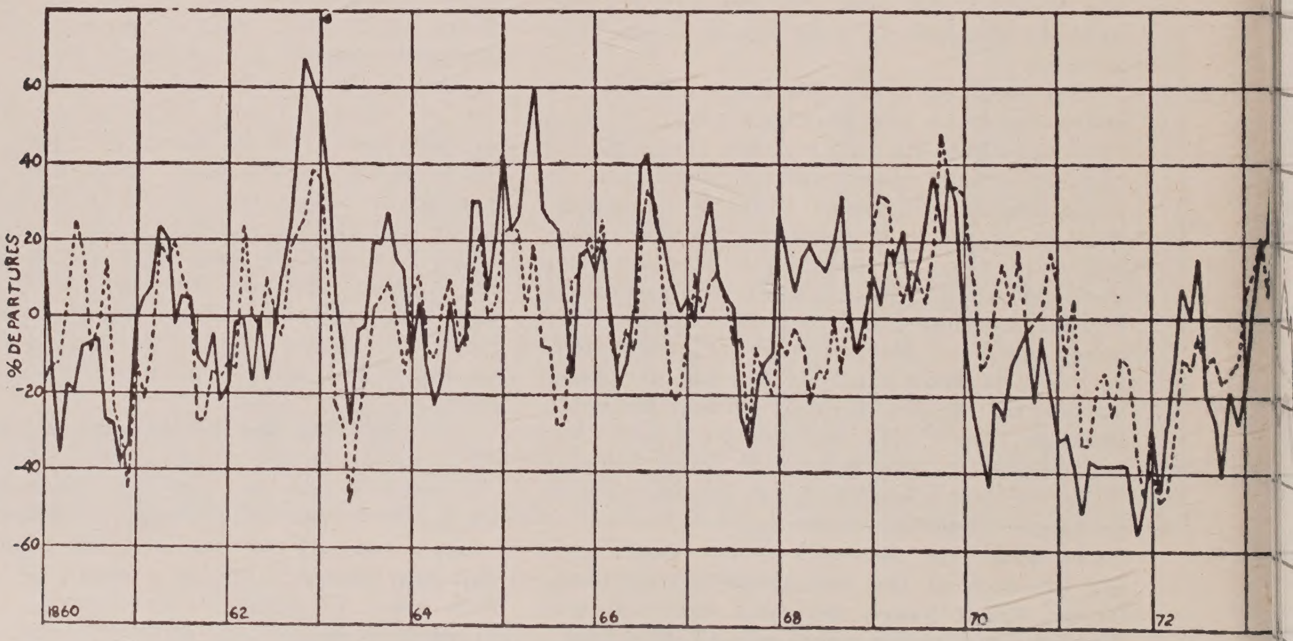
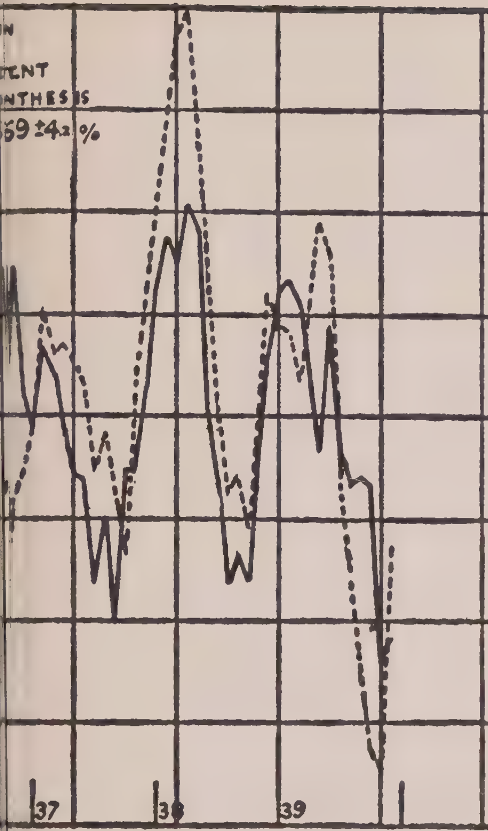
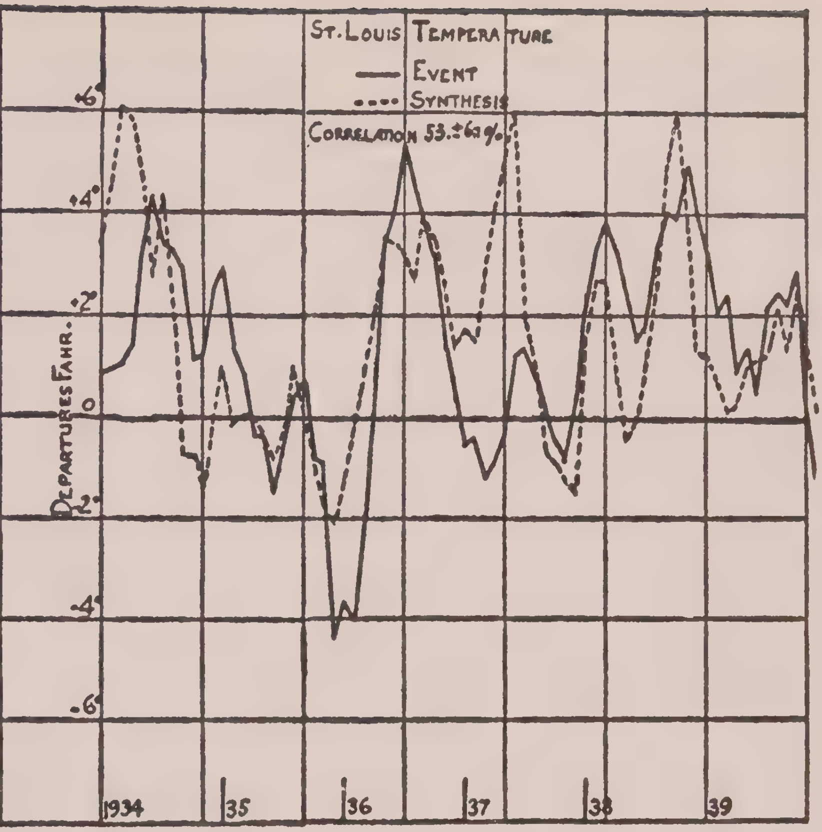
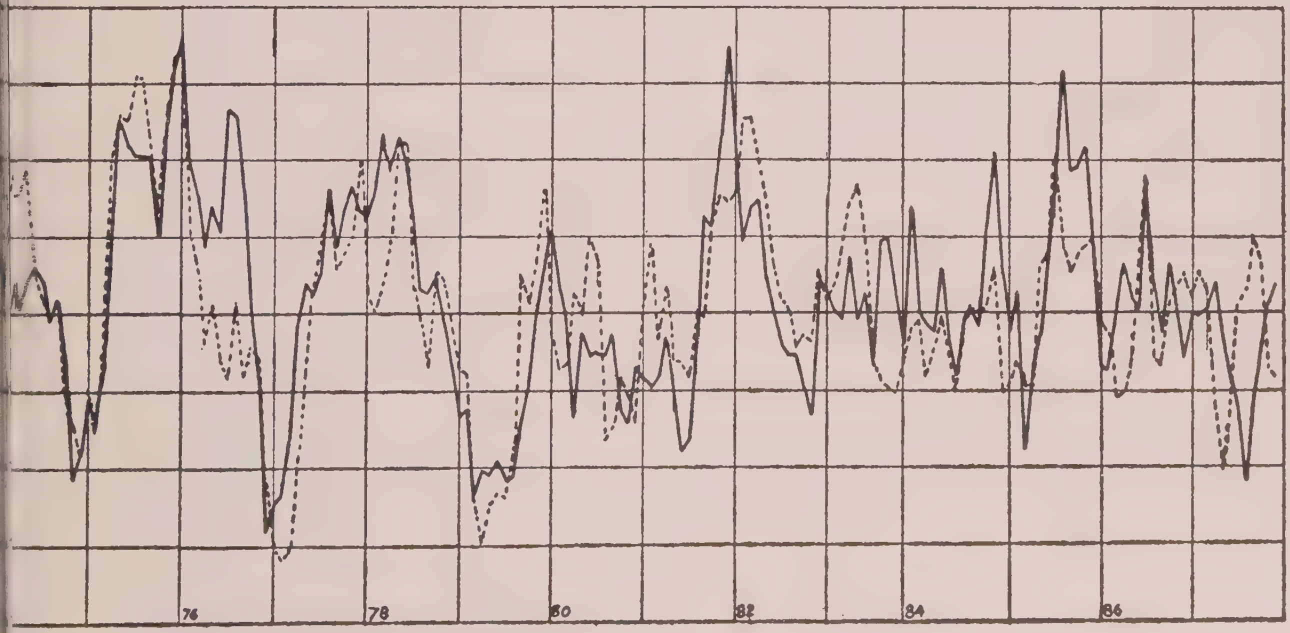


Fig. 5. Synthesis of computations, 1860--1887, of St. Louis precipitation compared to the event. Dotted curve, computed; full curve, the event. All from 5-month smoothed running means.


N
ENT
NTHESIS
59 ±4.2 %
37
38
39


St. Louis Temperature
Event
Synthesis
Correlation 53.±6.2 %
+6°
+4°
+2°
0
-2°
-4°
-6°
Departures Fahr.
1934
35
36
37
38
39


76
78
80
82
84
86

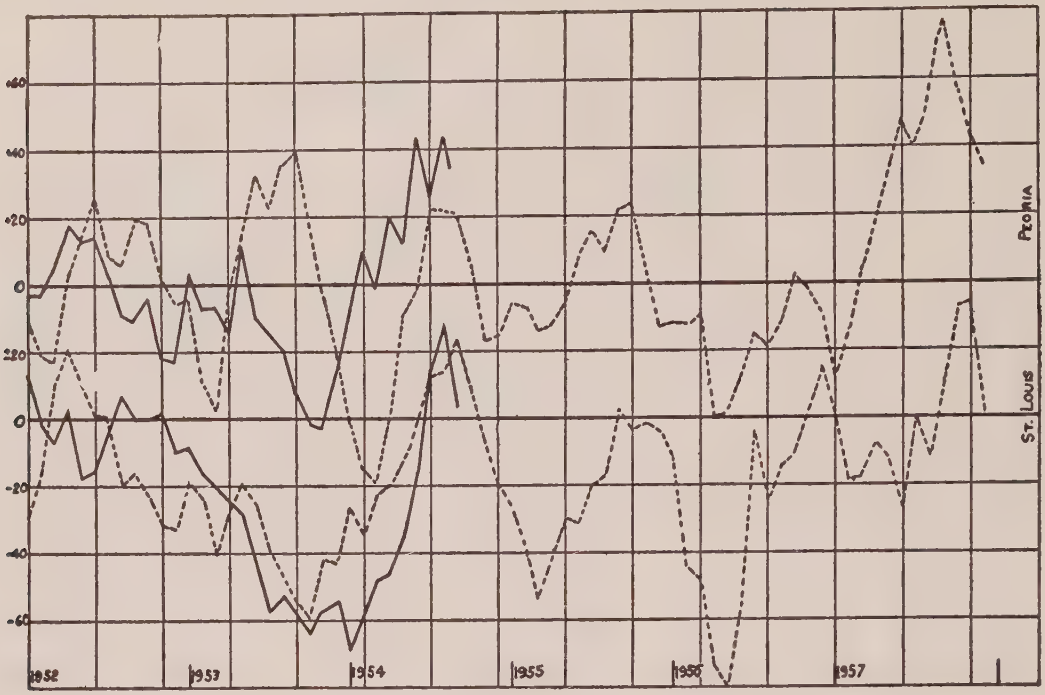


Fig. 6. Predicted precipitations, Peoria (upper) and St. Louis (lower), 1952—1957, from mean forms of 22 periodicities over the epoch 1854--1939. End of prediction 18 years after 1939 and 60 years after middle of base, 1897. Dotted curves, prediction; full curves, event. Horizontal lines represent normal precipitation. Drought indicated ending 1957.

industries. The only fly in the ointment seems to be that tremendous disturbances of the atmosphere, such as sometimes are caused by volcanoes, and also by profuse use of powerful bombs, in war and in tests, may spoil forecasts of this ambitious type."

Critique: I feel that Doctor Abbot's observations (a) that cycles in rainfall and temperature behave differently according to the number of sunspots and (b) that cycles behave differently in different seasons of the year are provocative. I feel that these concepts are worthy of further investigation. As Dr. Brooks said at a recent meeting at which Dr. Abbot spoke, "We must either prove that these things are not so, or we must discover why they are so."

THE STOCK MARKET CYCLE SYNTHESIS

As you know, the 10 stock market cycles discovered in 1944 are being audited and, where necessary, are being revised.

I have already discussed the audit of the 9.18- and 8.17-year cycles.

Another cycle clearly evident in the residual, after the 10 cycles are adjusted for, is one about 27 or 27½ years long. I'll tell you more about this cycle in another report.

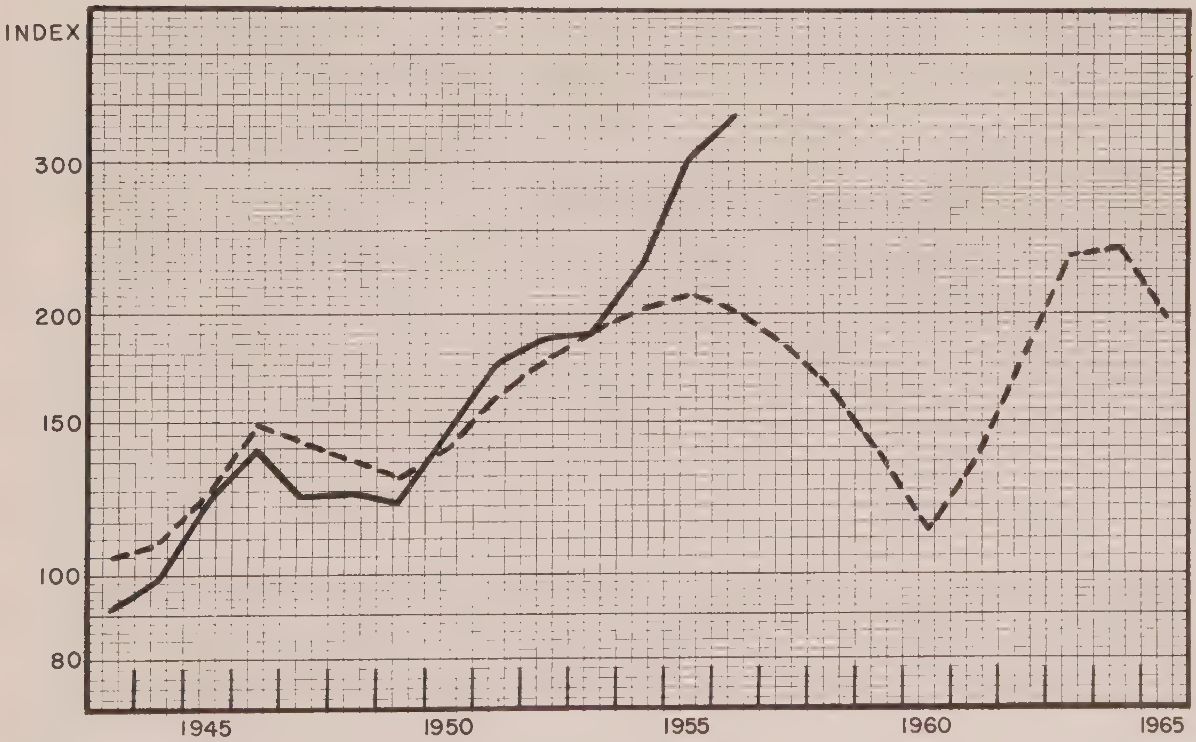
In the 1944 forecast I used underlying growth trend as determined by the Cowles Commission in 1939. This trend has now been revised, as discussed on pages 325-27 of this report.

Using the *new* values of the 9.18- and 8.17-year cycles, using the *old* values of the other eight cycles, using the *new* trend, and *adding* a 27-year cycle gives us for 1943—1965 the synthesis shown below. The synthesis is charted by means of a broken line. It crests in 1955. It troughs in 1960.

Actual prices 1943—1956 (1956 est.) are shown in the chart by a solid line.

You will note that the crest in the actual figures comes at least a year later than the time of crest called for by the synthesis. This circumstance may be due to random forces or may be due to the fact that the 1944 work did not include cycles less than 4 years long. Two or three shorter cycles in combination could easily combine to move turning points of the synthesis a year or so one way or the other. As soon as I can finish the audit of the other eight cycles discovered in 1944 I shall turn my attention to the shorter cycles.

E.R.D.



Solid line; 1943—1956, Standard & Poor's Corporation Combined Stock Price Index (1935-39 = 100), as this index actually unfolded.

Broken line; 1943—1965, a combination of 8 cycles as determined in 1944, trend and a 27-year cycle as determined in 1956 and the 9.18- & 8.17-year cycles as revised in 1956.

THE 5½-YEAR CYCLE IN AIRPLANE TRAFFIC, U.S.A. 1930—1955

MR. Albert J. Kapteyn of East Hartford Connecticut has called my attention to a 5½-year cycle in airplane traffic in the United States. Mr. Kapteyn is a former airlines engineer at Pratt and Whitney Aircraft Engines.

Airplane traffic is measured in billions of passenger miles. Figures are available from 1930 and are plotted as Curve A in Figure 1 herewith. The tendency for growth to be more rapid at intervals of about 5½ years is evident by inspection.

Curve B shows a 5-year geometric moving average trend of Curve A. The two values at each end are estimated.

Curve C shows percentages above and below trend. Curve D diagrams the 5½-year cycle.

The 5½-Year Cycle

The 5½-year cycle crests ideally at 1957 and has a typical strength of 15.5% above trend at time of crest; 13.4% below trend at time of trough.

Evaluation

With a series of figures as short as this we have had time for only about five repetitions of the cycle. This is pretty few on which to base judgment in regard to significance. However, a 5½-year cycle is well established in other things. In corn prices it was discovered in 1875 and has been coming true ever since. The 5½-year cycle is also present in stock prices as I have often told you. Cycles of about this length (5.4 to 5.6 years) have also been found in European weather, cotton prices, pig iron prices, sunspot numbers, and the sales of at least two manufacturing companies. On the whole I think we are justified in accepting it tentatively for airplane traffic.

Underlying Growth Trend

More important, by adjusting for the effect of this 5½-year cycle we can get a more accurate estimate of the fundamental underlying growth trend than we can get in any other way. When we do this we find that growth is increasing at a decreasing rate.

The Future

The *rate* of growth of airplane traffic in the United States is likely to slacken off for the two or three years following 1957.

E.R.D.

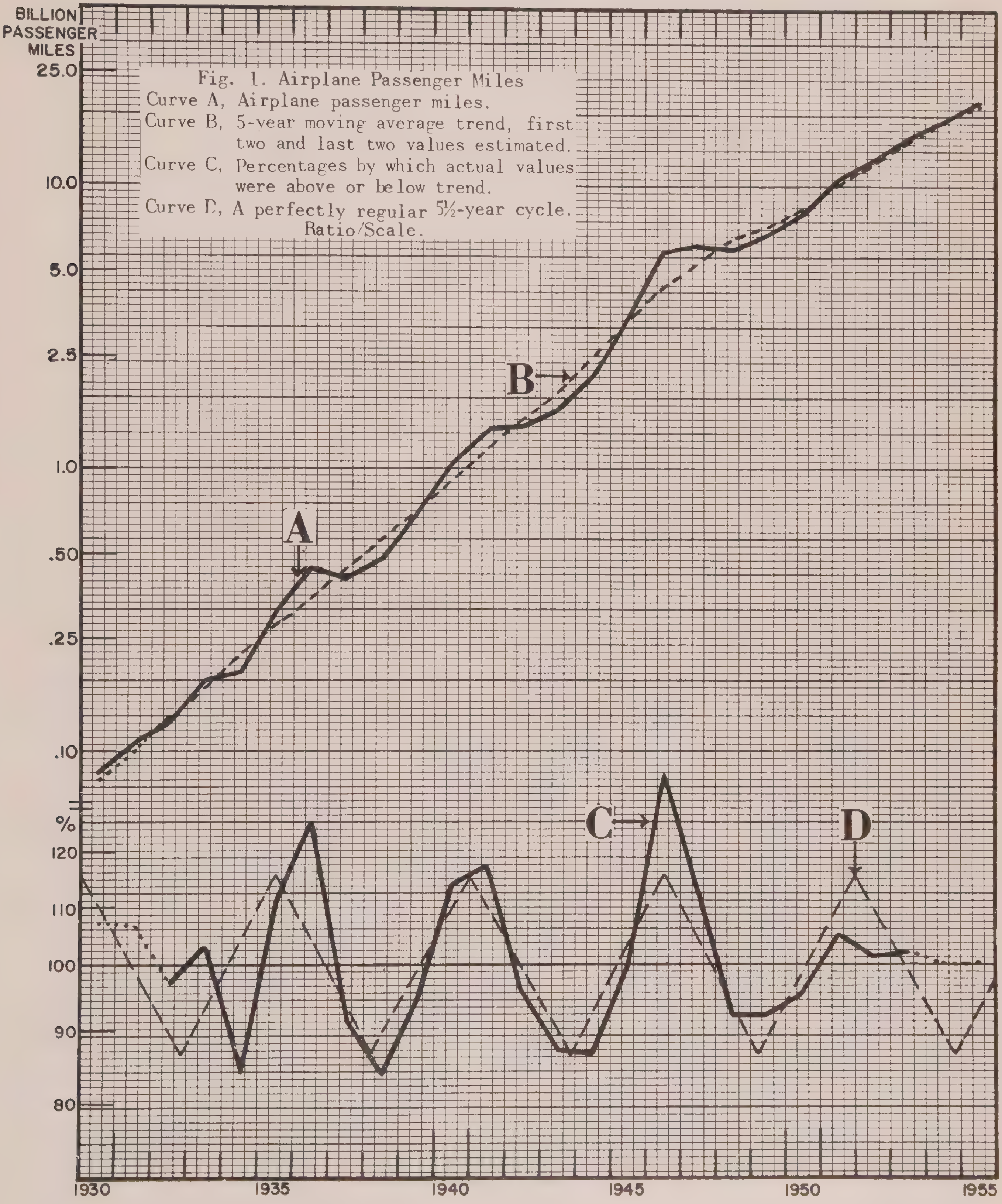


Fig. 1. Airplane Passenger Miles

Curve A, Airplane passenger miles.

Curve B, 5-year moving average trend, first two and last two values estimated.

Curve C, Percentages by which actual values were above or below trend.

Curve D, A perfectly regular 5½-year cycle.

Ratio/Scale.

STOCK MARKET CYCLES FIT THE MUSICAL SCALE

by D. S. Castle

YOUR restatement of the peculiar behavior of cycles in the October 1955 issue of cycles is most refreshing. As a result of your skill in accurately determining the periods in your 1944 Stock Market Forecast, it can be shown that the cycle lengths are intimately related and that "time" is fixed and absolute in the series.

Stock Market Cycles Plotted on Musical Scale

On the enclosed graph the tempered musical scale is shown as a straight line on semi-logarithmic paper by using the theoretically correct intervals of 3-3-2-3-3-3-2 between the notes of the octave. With the 14.50 year period taken as "do" the cycles used in your forecast are shown as x's on the nearest whole notes of the scale. 33 months and 41 months are shown as they also fall on the whole notes.

Because of the limited number of 21.0 year periods in the series, it would be difficult to fix that particular period as accurately as the other periods. In figuring the average deviation of the cycle lengths from the periods of the whole notes of the octave calculated from the true fractions of 1 9/8, 5/4, 4/3, 3/2, 5/3 and 15/8, the 21.0 year cycle is therefore omitted. This average deviation is only 0.62% as compared with intervals in the scale of 6.7%, 11.1% and 12.5%. The maximum deviation is only 1.1% for the 12.0 year cycle.

Exact Spectrum Remarkable

Such an exact spectrum is remarkable in a series whose fluctuations are popularly supposed to be caused by the "news" or to be the result of manipulations by a mysterious "Mr. They". Further analysis of shorter cycles and periods for which no cycles are shown might reveal that "do" should be 10.90 years rather than 14.56 years from which the variations were calculated.

Practical Application

It has been hinted in the preceding paragraph that the spectrum has a practical application in indicating specific periods for minor or hidden cycles, or for shorter cycles if a monthly rather than yearly series is used. Of much greater importance is the simplification to be obtained in analyzing and summing the cycles in a series, when the series is "interpolated in time" to a multiple of the whole numbers representing the musical scale, which are 24, 27, 30, 32, 36, 40, 45 and 48. This interpolation would eliminate fractional periods and simplify the analysis of changes in amplitude of the individual cycles.

Energy Shifts

This phenomenon of a fixed spectrum suggests that a concepts similar to the quantum concept of physics is applicable. When energies are increasing we could expect a shift to the longer periods in the spectrum and more emphasis in shorter periods when energies are diminishing. This may account for the fading and reappearance of specific cycles.

Reversals of Phase

Another feature of the musical scale is that, with the exception of the octave, all the other intervals between the various notes are such that reversals of phase occur periodically between each two notes of the scale. The only result possible is that the weaker cycles will reverse their phase periodically. It is also possible that a combination of cycles could cause one of the strongest cycles to reverse phase.

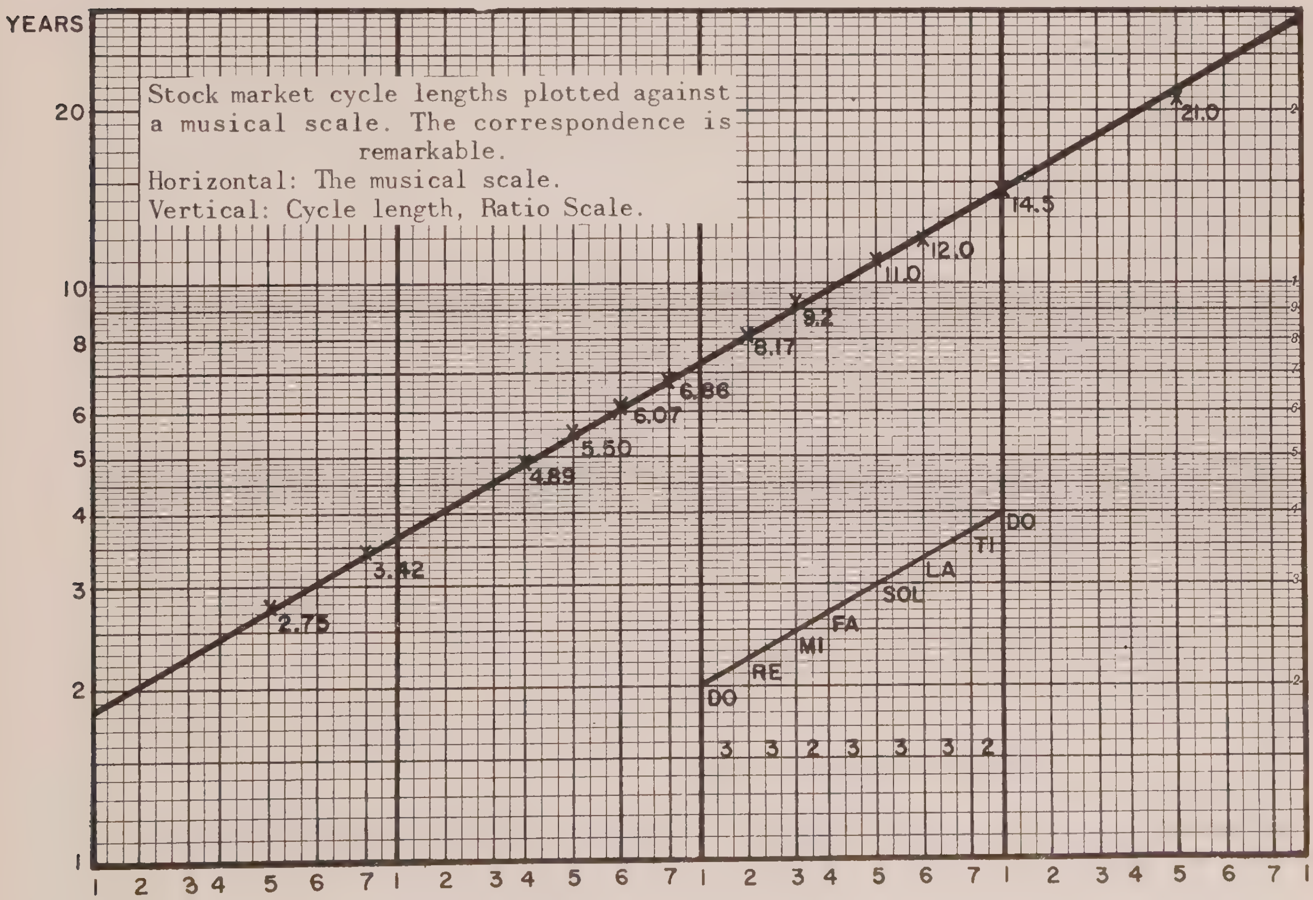
Relative Rather Than Absolute Strength Important

Amplitudes are commonly regarded as measures of the energy of cycles. Actually they are the accumulated energies for a specific period of time. The true energy of a cycle in its effect on the movement of a time series is its amplitude relative to its length. The relative amplitudes for your forecast in the order given are 0.72-1.27-0.89-1.21-1.00-1.87-0.35-1.26-0.85-0.81. Where the amplitudes show considerable variation, these energies are relatively constant and the total for the first five is 5.09 and for the second five the total is 5.14. The energy appears to be evenly distributed between the two octaves of cycles. In analyzing periodograms it seems to be the common practice to pass over the shorter cycles because of their relatively low absolute amplitude and to catalog them as random elements when their true energies as far as affecting the movement of a series are as great as the energies of the longer cycles.

Given a fixed spectrum with energies distributed over the octaves over a long period, it would seem that the probability of any cycle continuing to manifest itself cannot be calculated unless we know the limits of the variations in its energies. Until cycles can be related to the energies which produce them, prediction will continue to be uncannily right or stupidly wrong.

Causes

The mechanism which can produce the spectrum of cycles in the stock market must be cosmic in its nature. On the other hand certain economic energies cannot be disregarded. The operation of the Federal Reserve System by providing an almost unlimited supply of economic fuel appears to have shifted the concentration of the economic energies from 41 months and 9 years to 9 years, 20 years and possibly 27 years. It seems to have been forgotten that the philosphy of "bigger and better" applies not only to booms, but also to busts.



Stock market cycle lengths plotted against a musical scale. The correspondence is remarkable.
Horizontal: The musical scale.
Vertical: Cycle length, Ratio Scale.

Letters

"....OPEN THE DOOR TO CYCLES WITH VARYING FREQUENCY AND AMPLITUDE...."—DR. GREBE OF DOW CHEMICAL

Dear Mr. Dewey

Ever since 1943, when I met you, I have been following with interest and appreciation the work that you are doing. Your article in a recent issue stating that we must open the door to cycles with varying frequency and amplitude impresses me very much. The data that is available should be corrected for inflation, population, etc. Then it is modified by subtracting the known variables with a fixed frequency, such as those due to the daily, weekly, monthly, seasonal, and longer range cycles, like the sun spot cycle, that are not likely to change in frequency and whose amplitude can be evaluated to meet the specific requirements at the time. We then have left a residue that should include the underlying new trends and variations. If these were fed into a simple analog system, electrical, or for the sake of easy teaching, an hydraulic system, one could determine the coefficients by which the frequency and also the amplitude are changing at any one time. These should have a very important meaning. They should be sufficiently pinpointed as to time and direction to be more easily associated with current events.

To do this one could use a diagram made up of a flowing liquid going through variable resistances, into and out of reservoirs of variable head and surface area to volume relations. The rate at which one would have to modify the number of capillary siphons and the volume, surface, and height relations of the reservoirs would give one the coefficients that would be pertinent. In other words, one would set a series of small motors to operate through a given sequence of speeds and directions, in order to make the trace of this apparatus match the actual data that one has left when the regular deviations have been subtracted. It would not take long before a person would become quite expert in adjusting the motor speeds and the like to the curves. It could then be made automatic, so that the coefficients could be read from a chart.

As usual there is a lot that I would like to see done that I cannot do myself. I am hoping that one of your readers is the kind of individual who would enjoy doing a thing like this. If so, I would be glad to be of help, with suggestions of what might be done to meet specific obstacles.

Sincerely yours,
John J Grebe, Director
Nuclear and Basic Research Department
Dow Chemical Co.
Midland, Michigan

MISCELLANOUS

Attention, Sunspot and Long-Term Cycle Workers!

Mr. D. Justin Schove, Principal, St. David's College, South Eden Park Road, Beckenham, Kent, England, would like to exchange reprints with authors working on sunspots before 1750 or on cycles of 9 or more years in length.

THE MODIFIED GEISINGER INDICATOR FORECAST

THE Modified Geisinger Indicator for June 1956 (February 1957 when projected) has definitely turned upward. It has completed the bottoming out I referred to last July.

The Federal Reserve Board Index of Industrial Production is up from 142 (revised) for August to 144 (preliminary) for September. My guess of an average of 137 for the second half 1956 is obviously too low. The average for the third quarter is 140.7. The average for the fourth quarter will doubtless be higher.

As you know, the F. R. B. Index of Industrial Production was 141 for June; 136 for July, the month of the steel strike; and now, 142 for August. Unless adjusted for, this abnormality for July is going to create a distortion in the Modified Geisinger Indicator. To avoid this distortion I am going to "bridge" from June to August and use for July a value of 141.5, half-way between June and August, just as if the strike had not taken place. This will make the Modified Geisinger Indicator values for June, July, and August more realistic.

Using the bridged values, the Modified Geisinger Indicator value for June 1956 (February 1957 when projected) is -2.10. And, assuming no revision of figures already published, the value for July 1956 (March 1957 when projected) will lie between -2.16 and -.16. The value for August 1956 (April 1957 when projected) will lie between -.16 and +3.00. Please post these values to your chart.

The *smoothed* F. R. B. Index of Industrial Production values are 139.33 for June; 139.66 for July; 140.66 for August. If we "bridge" the strike month the values are 141.16 for June; 141.50 for July; 142.50 for August. These values should also be posted to your chart.

As I said last month, the Modified Geisinger Indicator is available back only through 1947. During this time there have been three dips prior to the one we are now coming out of. The first was followed by the F. R. B. Index dip of 1948-49; the second was followed by the F. R. B. Index *leveling* of 1951-52; the third was followed by the F. R. B. Index dip of 1953-54. In view of the present strength of the F. R. B. Index it is clear that our present situation is more like that of 1951-52 than like that of 1948-49 or 1953-54.

As far as the Modified Geisinger Indicator can tell us (or at least as far as I can read what it says), the decline in industrial production that it has been telling us about is over. As the indicator unfolds we can get a better idea of whether the near future will be merely a leveling or will be a new advance.

October 27, 1956 *E. R. Dewey*

THE MODIFIED GEISINGER INDICATOR

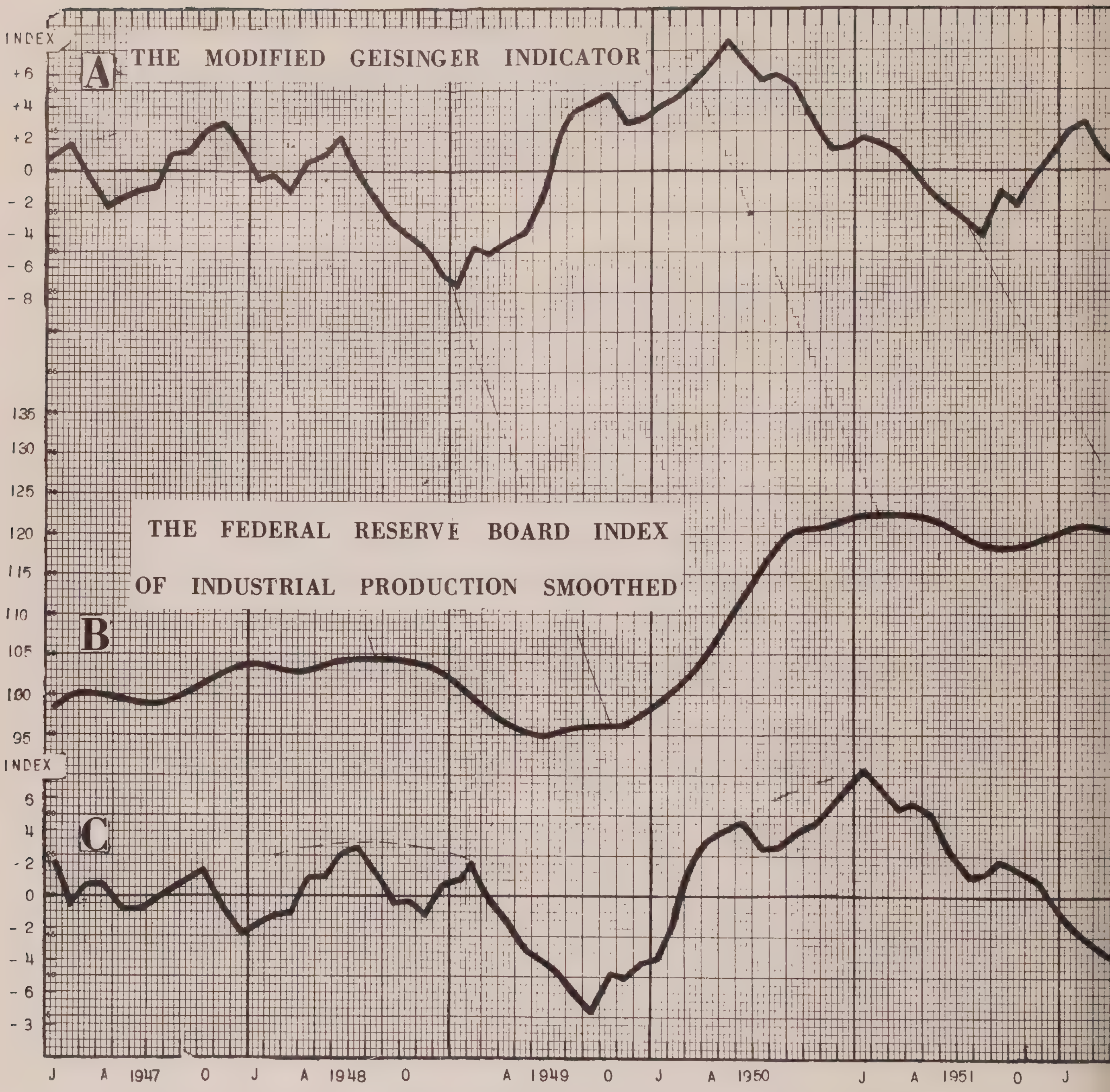
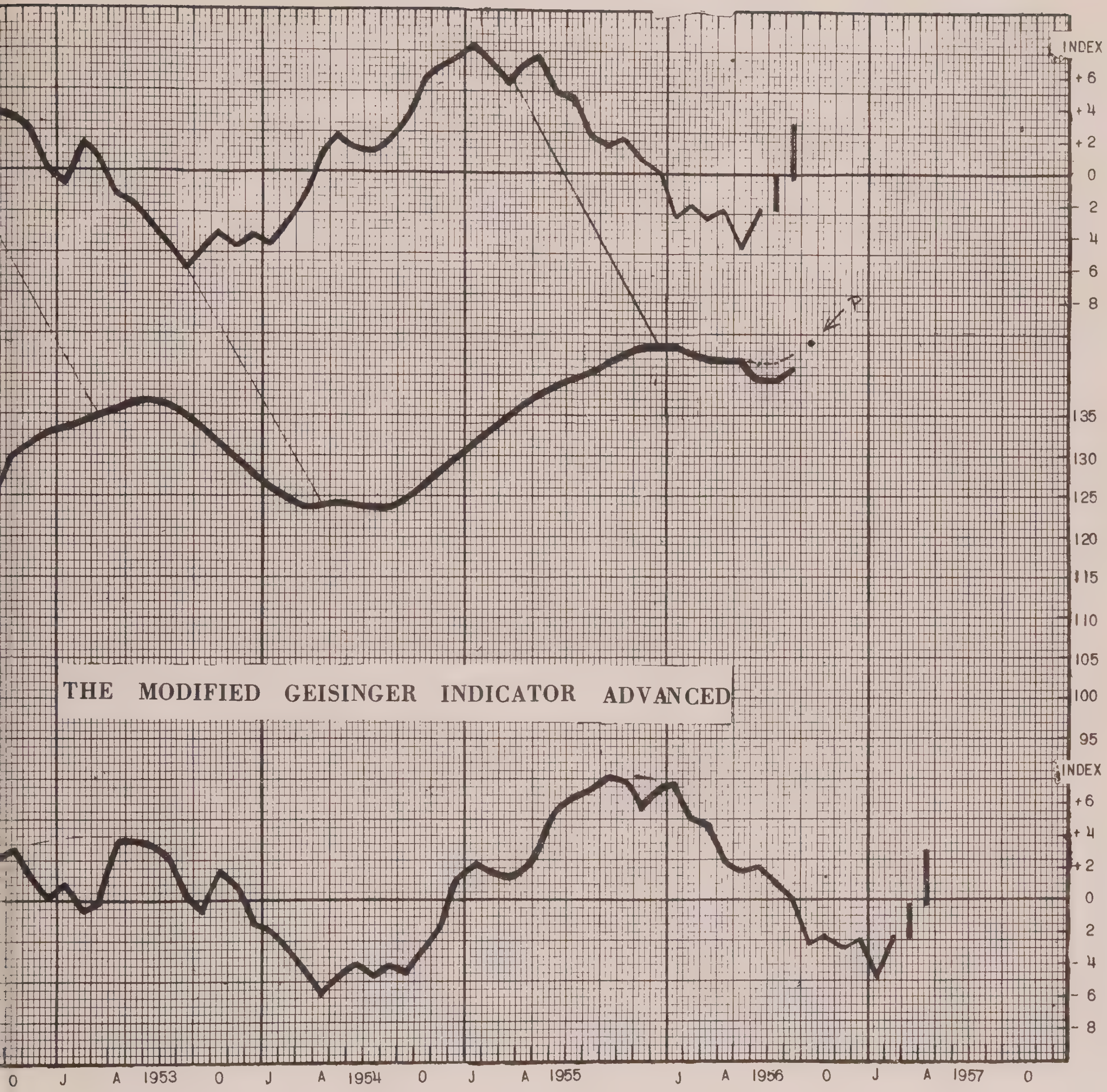


Fig. 1. Curve A. The Modified Geisinger Industrial Production Indicator Curve. This curve is derived from certain figures which are published monthly in the *Survey of Current Business*. It tends to turn about 8 months before the Federal Reserve Board Index of Industrial Production.

Curve B. The Federal Reserve Board Index of Industrial Production adjusted for seasonal variation and smoothed by a 3-month moving average. The value for the latest available month is shown by a dot.

Curve C. This Curve is the Modified Geisinger Industrial Production Indicator Curve advanced by 8 months. This process projects part of the curve into the future. If the relationships of the past continue, the projection gives some hint of what may happen to the Federal Reserve Board Index of Industrial Production (Curve B).

OF INDUSTRIAL PRODUCTION



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